

ABSTRACT

The invention provides methods and kits to form water swellable gel coatings, preferably lubricious coatings, on substrates, and coated substrates thus formed. The coatings contain one or more antimicrobial metals formed with atomic disorder, together with one or more antimicrobial metals formed with atomic disorder such that the coatings provide an antimicrobial and anti-inflammatory effect when wet. The invention also provides a method to produce metal powders by sputtering a coating onto a moving surface, and then scraping the coating with one or more scrapers to produce the metal powder. The method is particularly useful for producing large amounts of nanocrystalline antimicrobial metal powders formed with atomic disorder, useful in the water swellable gel coatings of this invention.